Quantel Rio™

High performance online editing, color and finishing for HD, UHD, 4K and 8K

Snell Advanced Media

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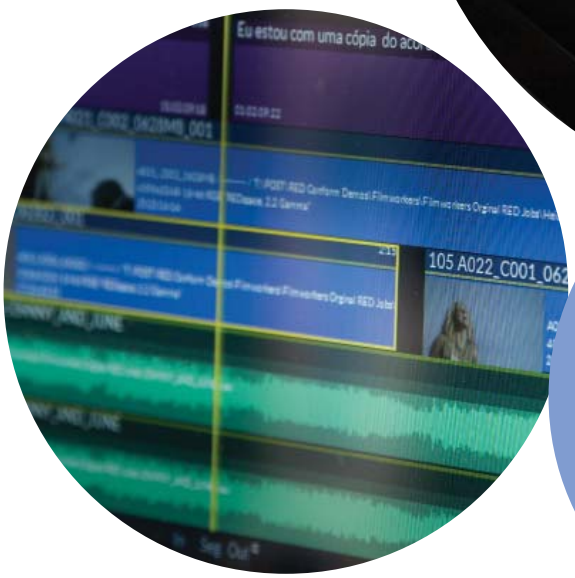
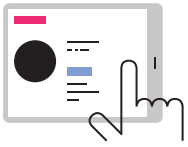


With HDR and Wide Color Gamut features, brand new interface, enhanced Avid integration and super accurate cloud tracker, Quantel Rio provides the complete color and finishing system.



For further information on award-winning SAM products visit:

www.s-a-m.com

The Quantel name has been synonymous with innovation and excellence in post-production since the birth of digital systems. Quantel Rio™ is the latest name in that proud line – delivering stunning images at any and every resolution, color space and framerate – whatever today's rapidly-changing industry throws at it. Quantel Rio has the power to handle the whole job interactively through its comprehensive online editing, color correction and finishing toolset.

Whatever the job, Quantel Rio blends quality and creativity in a package that delivers the productivity needed to succeed in movie and TV finishing, getting the whole job done efficiently and without creative limits.

Performance
Quantel Rio delivers the ultimate productive post workflow. Thanks to its realtime performance, its complete, integrated toolset that keeps the whole job in the suite, and full integration into today's file-based workflows, Quantel Rio can handle everything you require from a finishing system – interactively and in realtime, making it the natural choice for client-attended sessions.

To achieve this performance, Quantel Rio runs on enterprise PC hardware that exploits the latest NVIDIA Maximus multi-GPU technology to deliver interactive, realtime working even at 8K 60p.

Quality
With native colorspaces stored on disk, Quantel Rio handles Wide Color Gamut (WCG) and High Dynamic Range (HDR) grading utilizing a range of transfer curves. Its 32-bit full-float processing provides the best quality results with the highest precision color reproduction output in a range of colorspaces, including REC 2020, ACES, DCI-P3 and REC 709.

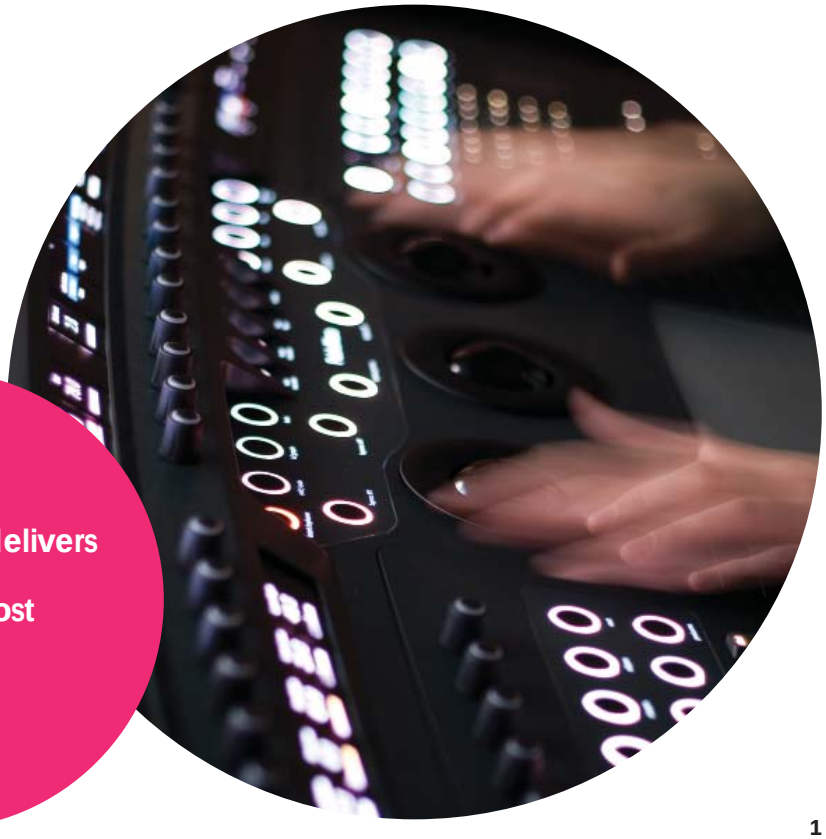
Choice
Quantel Rio is available in a choice of three turnkey configurations:

- Quantel Rio 2K – ideal for TV program and commercials finishing
- Quantel Rio 4K – unmatched power and capability for high-end TV and movie finishing
- Quantel Rio 8K – the world's only realtime 8K 60p color and finishing system

For those preferring to build their own hardware platform, there are two software-only options:

- Quantel Rio 4K software – all the tools for 4K color and finishing
- Rio Assist – workflow partner for prep, conform and pre-vis

Open
Quantel Rio supports a wide range of data formats alongside wide color gamut and HDR. These include: OpenEXR, RED HDRx, Apple ProRes 422, Sony F55/65, Arri RAW, Canon, Phantom, Silicon Image, Blackmagic Cinema DNG, Sony XAVC and GoPro.



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"Quantel Rio delivers the ultimate productive post workflow"

Quantel Rio has all the tools you need to create with color. There are no limits with Quantel Rio; wide color gamut, HDR, multiple transfer curves are all supported. 32-bit float processing provides ultimate color precision. Primary color corrections can be combined with unlimited cascaded secondaries and unlimited shapes, all in-context across the multi-layer timeline. Everything remains live for further enhancement.

Powerful primaries
Quantel Rio's wide range of primary color correction tools gives colorists the freedom to work the way they like. Primary tools include control of hue, saturation, lift, gamma and gain, with master and individual channel controls. Quantel Rio's S-curve pivot point function gives precision control over the critical toe and shoulder ends of the grey scale, enabling the colorist to give definition to shadow areas while rolling off the brighter areas to give a classic filmic look. RGB and Density Printer Light controls are complemented by editable curves working in RGB, YUV or HSL for complete color control; all this in any color space.

Unlimited secondaries
Secondary controls include unlimited cascaded secondary color corrections, HSL vector selective with control of High and Low Softness for hue, saturation and luminance, giving high precision results. The Revolver HSL-based secondary color corrector adds multiple simultaneous 'in-picture' modifications.

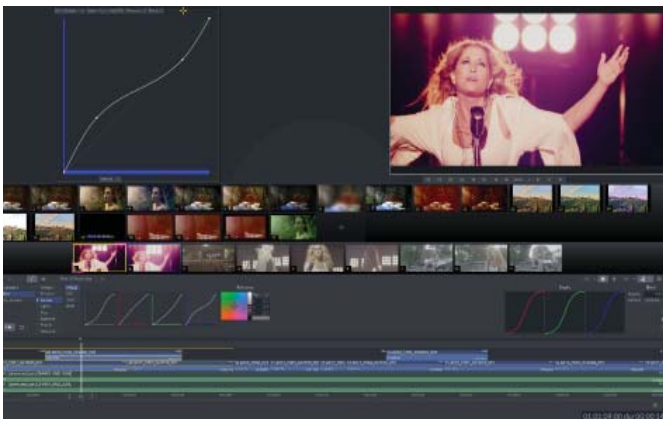
There are graphic one-shot and freehand tools for selection and isolation of secondaries within the image, with controls to grow, shrink or blur the selected area. Different keys can be applied on every cascade using the auxiliary clip function.

Blend modes can be used between cascades to create more subtle looks; this also provides an opacity control between cascades. Quantel Rio's Range control is a very powerful addition to the toolset which gives absolute precision and subtlety in selective color control. It allows the low, mid and high ranges for the individual color controls to be precisely defined. Using the range graphs it's possible to adjust exactly how each control will affect the image, including the tensioning and slope for each curve. Range-based saturation controls provide even more precision. Everything is easily accessed from the Neo panels. The range controls complement Quantel Rio's Dmin/Dmax controls.

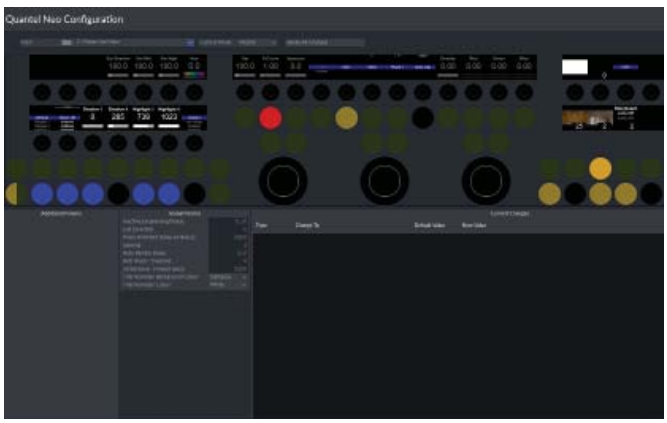
Shapes
Using Quantel Rio's shapes and HSL keyer in combination, the colorist can define highly selective treatments of specific areas within the frame – and can grade both inside and outside the shape within a single cascade. The colorist can choose from preset graphical shapes or hand draw them for ultimate accuracy. Full softness control is available inside and outside the shape using Quantel Rio's Matinee tool. Any plugin can be applied to any cascade and used inside or outside any shape or key. Quantel Rio's versatile point tracker or the integrated Mocha tracker and flexible shapes tools makes color correcting moving-image elements simple and quick.

ACES support
Quantel Rio supports The Academy Color Encoding Specification (ACES) and fully integrates into ACES pipelines, delivering a standard, future-proof color space.

ACES
PRODUCT PARTNER



Color UI featuring custom curves and storyboard



The Neo panel is individually configurable for multiple users

> **The Neo panel provides natural heads-up control of color and seamless interaction with Quantel Rio's comprehensive grade management facilities**

Groups and Storyboards
Quantel Rio's Groups function is a great timesaver; it allows a grade to be automatically applied across a group of shots selected within a timeline. This includes grouping based on rush ID (multiple shots that have come from the same source rush), source timecode or a manual selection, allowing color settings to be applied on an individual cascade basis. The result is faster client-attended operation with even more flexibility. The Storyboard facility allows a grade from any shot to be instantly applied to any other – not just within one job, but across multiple projects. For example, Episodes 2 and 3 of a TV series can quickly be referenced against the first episode to provide consistency of look - all at the lightning-fast speeds you'd expect from SAM.

Stereo3D color correction
Quantel Rio's autobalance tool fixes the inevitable left/right eye differences from the shoot prior to color correction. The Quantel Rio Stereo3D tools then enable each eye to be color corrected independently or together. Quantel Rio also includes full disparity control of shapes, making it easy to color correct in stereo.

Aperture correction
Quantel Rio's aperture correction tool enables variable sharpening and defocusing on a per-cascade basis with just a single control. Aperture correction can also be applied to separate RGB channels.

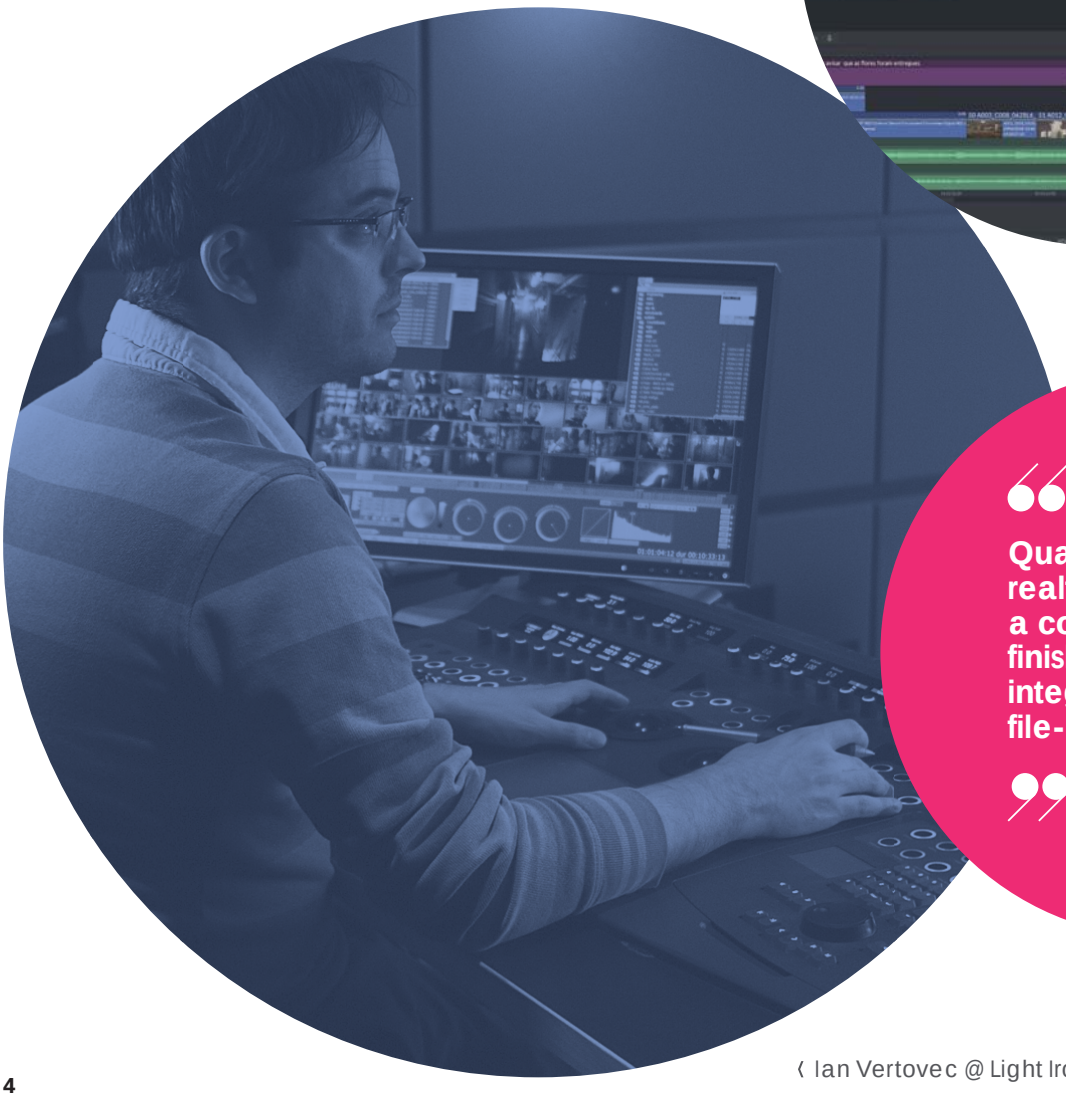
Integrated plug-ins
Plug-ins can be integrated into the color process, and be used within shapes and keys on a per-cascade basis – for example, to produce a specialized defocus or filters inside or outside a shape.

Choice of panel
There is a choice of two control panels – Neo and its compact counterpart, Neo Nano. Both provide natural heads-up control of color and seamless interaction with Quantel Rio's comprehensive grade management facilities. Both are a great way to access the power of Quantel Rio.

^^ The Neo panel – the ultimate control surface for colorists
^ The Neo Nano control panel

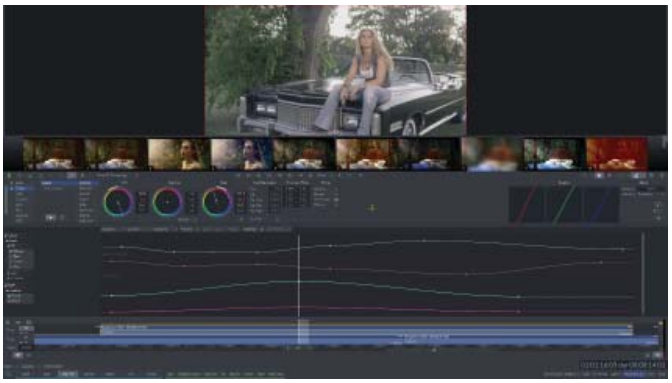
Quantel Rio's comprehensive editing and finishing toolset has everything you need to deliver the entire job, whether working with native colorspace on disk, grading in HDR, or outputting multiple versions in mixed colorspaces – all from the same timeline.

Quantel Rio is your complete digital partner, handling RED, ARRI, SI, Sony, Panasonic, Blackmagic and Canon digital media in a highly efficient workflow while maintaining ultimate image quality at 4K and beyond.



> **Quantel Rio has realtime performance, a complete color and finishing toolset and full integration into today's file-based workflows**

‹ Ian Vertovec @ Light Iron, Hollywood, California.



⌒ Quantel Rio includes comprehensive key-framing facilities

⌒ The Quantel Rio toolset delivers much more than color correction

Simple to use timeline editor
Whether dropping in late-arriving effects shots, trying a different-length dissolve or putting together a complete promo or trailer, Quantel Rio has all the 2D and Stereo3D editing tools to make editorial changes easy.

Stereo3D fixing and finishing
Geofix2 performs precision geometry correction, quickly producing easy-to-watch Stereo3D. Interactive depth balancing makes handing-off over-edits straight forward. Deliverables for different-sized screens are easily produced using the floating-window tools.

Stereo3D multi-layer timeline
Quantel Rio's Stereo3D multi-layer timeline makes editorial and effects work in Stereo3D every bit as fast as working in 2D.

Integrated Mocha tracker
The versatile Mocha planar tracker is fully integrated into the Quantel Rio toolset, alongside SAM's own point-based tracker. Using Mocha, the artist simply draws a shape around the area to be tracked and Mocha does the rest.

Conform
Quantel Rio gives you all the tools you need for video and file conforms including Avid effects. Conforms can be accomplished from either AAFs or EDLs and with both video and file-based media — MXF, DNxHD, RED, DPX, Cineon, Tiff, ARRI RAW, QuickTime and many others are supported.

The conform menu includes powerful tools for applying settings from existing clips to new media such as VFX shots, making it quick and easy to handle late changes.

Effects and compositing
Quantel Rio's integrated effects and compositing tools give the finishing artist an amazing array of choices for fixes – and the client more creative options – even at the final stages of a project. Never has it been easier to remove distracting items from a shot, replace a sky or even re-frame a whole sequence – right there in front of the client.

Titling
Quantel Rio's on-board tools make it easy to add titles – whether lower thirds in documentaries or complete subtitles for foreign language versions. Just another feature in the Quantel Rio armory that smooths workflow and gives clients more of what they need.

Audio
Quantel Rio brings up to 32 channel audio with sophisticated tools right into the color correction suite. With Quantel Rio, clients can review their movie at full resolution in realtime – not only with instant non-linear access to any shot or sequence, but also with 5.1 audio to complete the experience.

Respeeds
Comprehensive retiming tools, from optical flow motion through to using the world renowned Alchemist™ technology for the ultimate in smooth motion respeed algorithms.

Retouch
Being a SAM system, Quantel Rio has the legendary Paintbox built in. Paintbox is nothing short of brilliant for quick fixes – repairs, replacements, retouches, embellishments. All are completed seamlessly in seconds. Paintbox has rescued more shots than can be easily imagined – it is a huge time, money and face saver. Quite simply, nothing else comes close.

Versioning
Quantel Rio excels at producing the multitude of different deliverables that every movie now requires from the master – SD and HD for playout, airline versions, director's cut, different editorial versions for international distribution and the 'making of' for the Blu-ray. Re-sizing, reframing, 3D LUTs and pan-and-scan are all handled on-the-fly in realtime on output. More convenient for the client; more revenue for the Quantel Rio owner.

Integrated DCP toolset
SAM has integrated the widely-used Fraunhofer DCP API into the Quantel Rio toolset. This enables the creation of standards-compliant DCP encrypted masters for delivery, and the importing of DCP files into the Quantel Rio environment, facilitating their use as a high quality interchange format. Working with the Fraunhofer DCP toolset within the Quantel Rio environment saves time and costs associated with exporting media to external systems. Better still, creative work can continue uninterrupted on Quantel Rio while DCP packages are being created as a background task.

The ultimate color-correction environment

The Neo and Neo Nano panels provide the ultimate in color-correction control. Their simple and uncluttered layouts give fast access to Quantel Rio's comprehensive grading toolset. The all-in-one design looks great in your grading suite, with the OLED displays and EL-illuminated buttons allowing you to find all your functions and presets, settings and controls at a glance.

Both the Neo and Neo Nano are fully customizable, right down to the brightness of the displays and the sensitivity of the controls. The Neo panel can even be configured for left or right-handed use by swapping over the secondary and transport control panels.

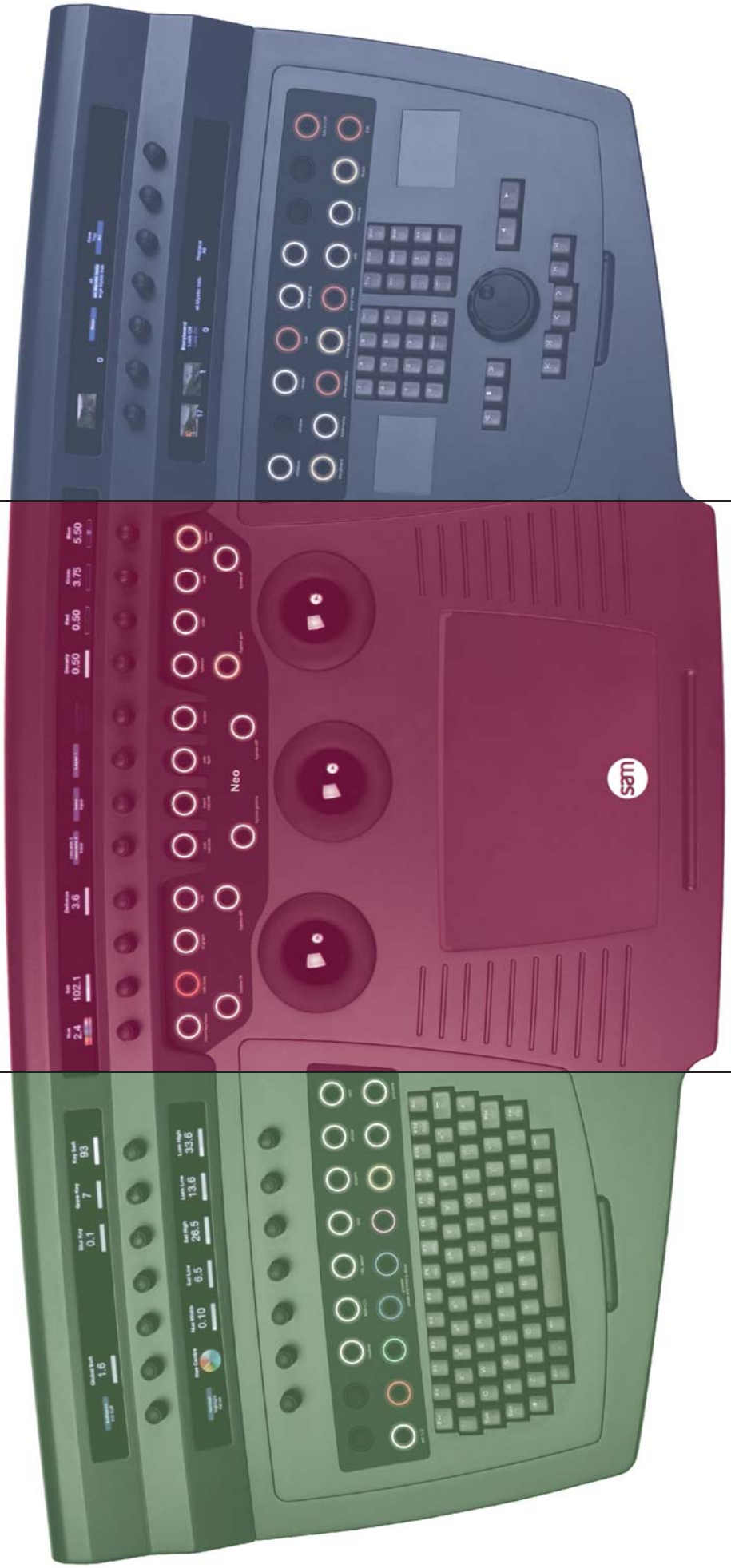
The Neo Nano Panel

Smaller footprint with12 full-color OLED displays, and the same electroluminescent buttons, Neo Nano offers identical core primary and secondary grading options, user-definable presets and interactive visual feedback to the full-sized Neo Panel in a much more compact size.

Transport controls

Primary grading area

Secondary grading area



USB port
for user customizable profiles for all control settings and sensitivity.

Grade management
for still store and storyboard, with grade grouping and trim management.

Transport controls
with still store, reference frame control, plus left and right glide pads - eliminating the need for a mouse.

Primary grading area
with high-mass track balls and built-in digitizing tablet for drawing complex shapes, retouching, etc.

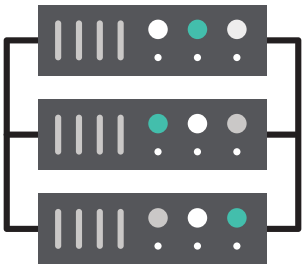
Secondary grading area
access to all the secondary correction and isolation tools, DVE, and banks of preset effects. Full keyboard speeds text entry for grade management.

40 Full-color OLEDs
associated with controls - interactive visual feedback on current selections.

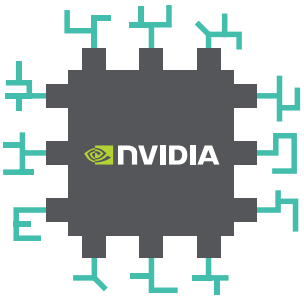
Electroluminescent displays
backlit legend makes controls easy to find in a darkened suite.

Quantel Rio's blistering performance is underpinned by the latest computer hardware.

Quantel Rio turnkey systems provide guaranteed out-of-the-box performance running on cutting edge PC hardware. They are available in a wide range of configurations to allow customers to tailor the system to their specific needs. Quantel Rio Turnkey systems are supplied fully assembled, configured and tested by Quantel to provide the ultimate in performance and are supported by SAM 24/7 worldwide.



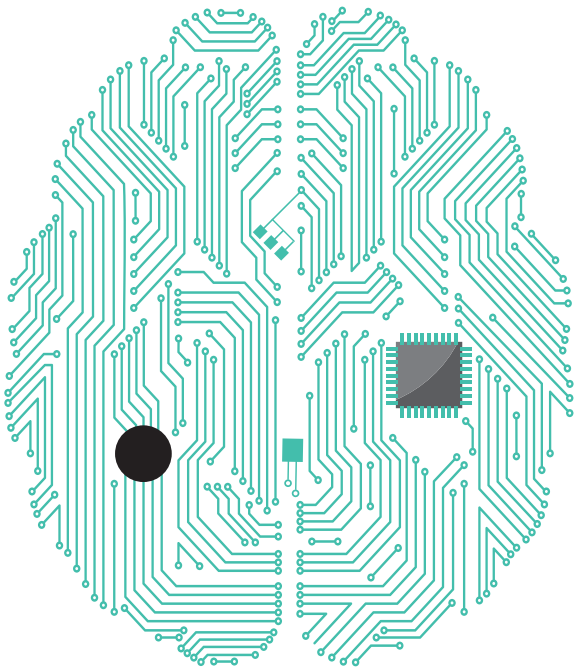
NVIDIA Maximus
Quantel Rio takes advantage of NVIDIA Maximus technology. NVIDIA Maximus enables multiple GPUs to work together in the same system. Quantel Rio uses Tesla GPUs with 4992 CUDA cores capable of delivering 8.74 teraFLOPS. This power is simultaneously applied to processing-intensive color and finishing operations in Quantel Rio, handling most tasks in realtime. The result is blistering performance that brings a new level of interactivity to the color and finishing suite.



Quantel Rio delivers stunning images at any and every resolution color space and framerate.

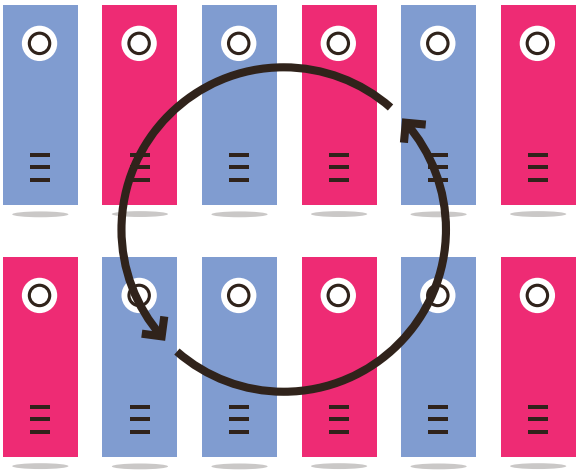
Quantel Rio PC up close

- Server Motherboard 4 x PCIe 3.0 x16 dual width slots
- AJA Kona 4/Corvid 88 Video i/o board Guaranteed performance – 8K, 4K, 2K, HD, SD, S3D i/o, 3G SDI
- Dual Core Xeon CPUs 64GB RAM
- NVIDIA Maximus Technology Tesla image processing & user interface GPUs
- Mirrored System & Audio SSDs Dual PSU



High Performance Storage

- Two 12 disk arrays, two parity disks/array Hardware parity generation
- Dual PSU Dual SAS interface Hot swappable drives
- Storage capacity examples 50 hours' RGB 1920 x 1080 10-bit@24fps 32 hours' 2K 2048 x 1556 10-bit@24fps 460 mins 4K 16-bit 24fps
- 24 x 1.8TB 10,000rpm SAS drives 36TB media capacity
- RAID 60 – images are striped across two RAID 6 arrays for maximum performance and reliability
- 2.0 GB/s Read 1.7 GB/s Write Play 4K 16-bit at up to 30fps from one chassis



With its complete color and finishing toolset and blistering performance, Quantel Rio is the natural choice to sit at the heart of your data-centric post pipeline.

Soft mount
With soft mount support for RED, OpenEXR, DNxHD, MXF, SStP, F55/65, XAVC, Arri RAW, Canon RAW, GoProMP4, Blackmagic Cinema DNG, Apple ProRes 422, DPX, Cineon, Tiff, P2, XDCAM and RED Epic, there is no need to import media into local workspace with Quantel Rio. Work can start immediately wherever the material is stored, whether on a USB drive, SAN or NAS. Quantel Rio Archives can also be soft-mounted.

Render on export
There's no requirement to render media to local storage with Quantel Rio. When the job is complete, it is simply rendered as it is exported to the facility SAN or NAS, saving time and disk space.

Teamworking with Quantel Rio
Teamworking with Quantel Rio is easy thanks to soft mount. With source media stored on the facility storage, all Quantel Rio systems can see the same source files. Project files (local archives) can be quickly saved and soft mounted by other systems. These archives point at the source rushes so jobs can be quickly accessed and shared between suites.

Rio Connect™
Better workflows; more productive post

The Rio Connect™ collaborative workflow engine instantly solves facility scheduling challenges by enabling media sharing between up to eight Quantel Rio systems. With Rio Connect, time consuming media transfers and copying are eliminated at a stroke.

Every Quantel Rio suite can work on the same job, or projects can be instantly moved between suites; Rio Connect enables you to maximize your productivity and revenues.

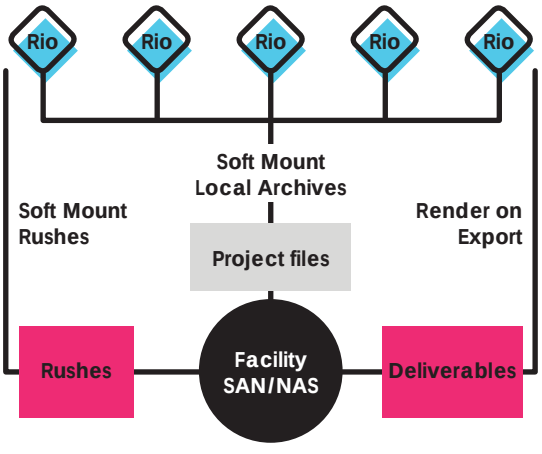
- Complete flexibility to move jobs at a moment's notice – take on short-notice work
- Teamwork across multiple suites instantly – take on jobs with tight deadlines
- Handle late changes with ease – happy clients return time and again
- Instantly review the state of a distributed project – stay in control

Rio Assist™
Workflow partner for Quantel Rio

Rio Assist™ is a cost-effective, software-only preparation, conform and pre-vis system for file-based editorial, online finishing and color correction. Rio Assist's powerful toolset handles all your backroom jobs quickly and efficiently, enabling your customer-attended Quantel Rio sessions to be even more productive.

Rio Assist is CUDA-enabled software, maximizing the performance of your chosen hardware platform. It supports up to 2K video output and naturally includes rich metadata compatibility with Quantel Rio.

- Advanced color tools and 3D LUT color management – create offline looks fast and efficiently
- Optional Neo Nano control panel – intuitive, interactive working
- File-based conform engine with multi-layer timeline editing interface
- High quality debayering and transcoding
- Supports all popular RAW formats – optimized workflows for digital capture systems



Quantel Rio suite @ Videomage, Paris

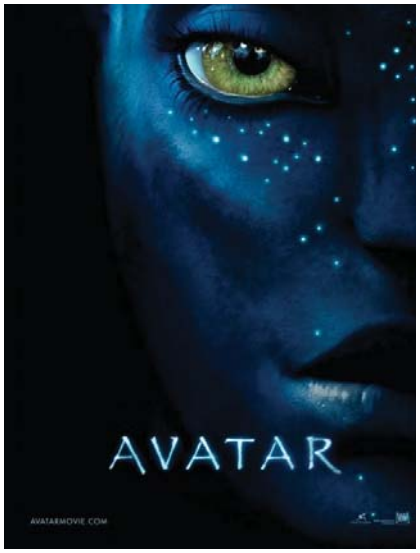
Quantel Rio Range

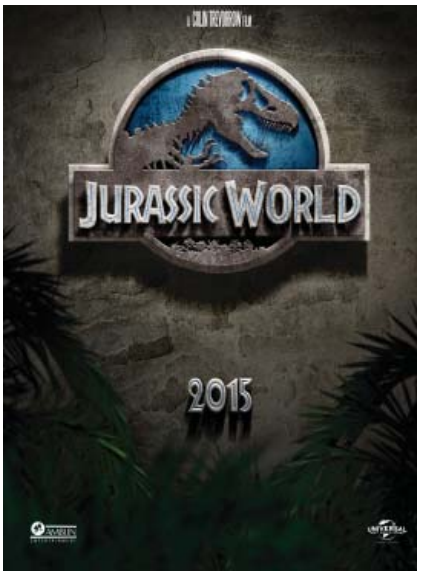
	Benefit	Quantel Rio Software		Quantel Rio Turnkey		
		Rio Assist	Rio 4K	Rio 2K	Rio 4K	Rio 8K
Color						
Full range of color tools	Complete creative color control	•	•	•	•	•
Unlimited Secondaries	Total color flexibility	•	•	•	•	•
Unlimited Shapes	Total color flexibility	•	•	•	•	•
Unlimited Still Store	Save time by having all reference frames online	•	•	•	•	•
3D burn-in, import and output LUTs	Use 65x65x65 cubes to set a look on import or prior to color correction. Real-time output luts	•	•	•	•	•
HDR Grading	Grade for High Dynamic Range	•	•	•	•	•
Store Native Colorspace on Disk	REC2020, P3, ACES, Hybrid Log Gamma...	•	•	•	•	•
32-Bit Float Linear processing	Highest quality results for both video and data	•	•	•	•	•
Neo / Neo Nano Panel	The best color panel ergonomics available. All tools available at a single button press	o	o	o	o	o
Toolset						
Timeline Editing	Make last minute changes easily	•	•	•	•	•
16 Track Audio	Comprehensive editing facilities	•	•	•	•	•
32 Channel Audio	Support for multi-channel audio	—	—	—	—	•
Conform	Comprehensive conform tools for both file and tape-based media	•	•	•	•	•
MLTFX	Save time and money by interactively finishing shots directly on the timeline with Keyer, DVE, Blur, Text, Tracker and Graphics tools.	•	•	•	•	•
Stereo 3D Toolset	Fix, perfect and deliver Stereo 3D content	•	•	•	•	•
Effects Toolset (incl Paint)	Paint tools	Paint only	•	•	•	•
Utilities	Add/Remove 3:2 plus other time-based functions	•	•	•	•	•
Scribe	Create and edit rolls and crawls quickly & easily	•	•	•	•	•
I/O and Playback						
Dual Monitor support	Organize clips and bins on your desktop	—	•	•	•	•
SD, HD and 2K Output	Video out up to 2K	•	•	•	•	•
SD, HD and 2K Input	Video in up to 2K	—	•	•	•	•
4K Output	Handle highest quality 4K jobs	—	•	—	•	•
4K Input	4K input support	—	•	—	•	•
8K output	x16 3G SDIs for 8K output	—	—	—	—	•
8K input	8K Input support	—	—	—	—	•
Real-time 4K 16bit playback	Reliably view and deliver every frame	—	•	—	•	•
Real-time 8K 16bit playback	Reliably view and deliver every frame	—	—	—	—	•
4K HFR 60fps support	Reliably view and deliver every frame up to 60fps	—	•	—	•	•
8K HFR 60fps support	Reliably view and deliver every frame up to 60fps	—	—	—	—	•
Real-time Pan and Scan	Make different format deliverables quickly while maximizing storage efficiency	•	•	•	•	•
16 Channel Audio i/o	Audio input and output supported	—	•	•	•	•
32 Channel Audio i/o	Interface to alternative formats	—	—	—	—	•
VTR Serial Control	Control VTR decks	—	•	•	•	•
Deliver to sQ	Get content to air quickly	—	o	o	o	o
Processing						
GPU (CUDA) Processing	Fast and upgradable for unbeatable creativity and throughput	•	•	•	•	•
Multiple GPU Support	Configure a system to match your needs	—	•	—	•	•
Workspace						
Minimum Workspace				6.3TB Internal Raid 5 Storage 8.5hrs HDRGB @25fps	1 x 36TB SAS array 12hrs 3840x2160 @25fps	3 x 36TB SAS arrays 5.5hrs 7680x4320 @60fps
Maximum Workspace				2 x 36TB SAS arrays 88hrs 2048x1080 @25fps	6 x 36TB SAS arrays 72hrs 3840x2160 @25fps	18 x 36TB SAS arrays 33hrs 7680x4320 @60fps

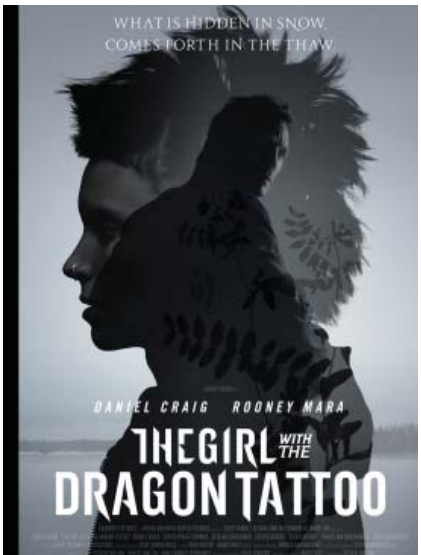
Key:

• Standard o Option — Not Available

Interstellar, Avatar, The Girl with the Dragon Tattoo, Hugo, Gone Girl, My Week with Marilyn – just a few of the thousands of movies in which Quantel Rio has played a central role. Quantel Rio's TV credit list is equally impressive, from Desperate Romantics to Birdsong.





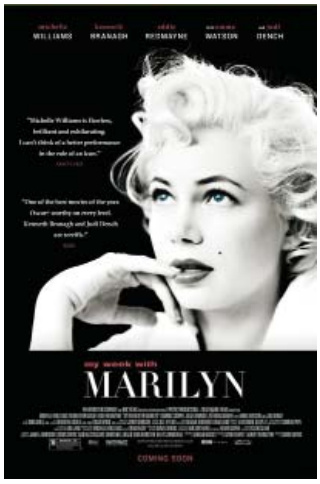


Along the way, Quantel Rio has time and again broken new ground: truly interactive working at high resolution; the world's first viable Stereo3D toolset; embracing file-based capture and workflows; and integrating a complete editing and finishing toolset alongside color correction so that jobs speed through the suite whatever the challenge.

Quantel Rio's outstanding success is no accident. It was designed with the help of top colorists, and their vision realized with unique technologies and thinking. The result is the most powerful, capable and precise color correction and finishing environment on the planet.

With Quantel Rio, client-attended sessions have become an interactive, creative experience, while the integrated finishing toolset gets the whole job done more quickly and more efficiently.

Quantel Rio offers a range of systems that takes advantage of the latest PC hardware to provide new levels of interactivity and openness.


MARILYN

RAMPART

RESTREPO
ONE PLATOON, ONE VALLEY, ONE YEAR

THE STANFORD PRISON EXPERIMENT

PETER JACKSON
NEILL BLOMKAMP
NO HUMANS ALLOWED
DISTRICT 9
YOU ARE NOT WELCOME HERE

NOTHING SPREADS LIKE FEAR
CONTAGION
SEPTEMBER 9

BEN AFFLECK ROSAMUND PIKE
GONE GIRL

UNLOCK THE SECRET
HUGO

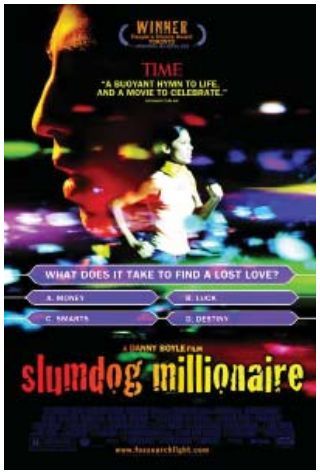
STAR WARS
EPISODE III
REVENGE OF THE SITH

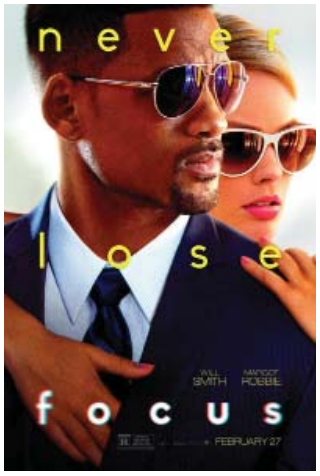
He's Leaving His World Behind
THE SPONGEBOB MOVIE SPONGE OUT OF WATER
3D

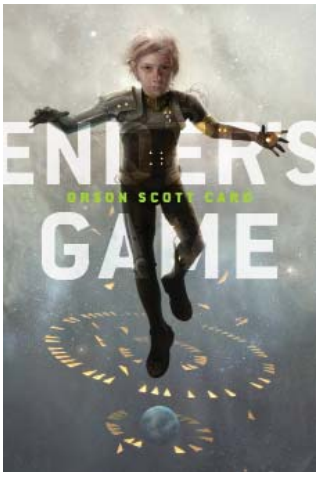
DWAYNE JOHNSON
SAN ANDREAS
MAY 29

CIRQUE DU SOLEIL
WORLDS AWAY
3D

ROBERT DOWNEY JR.
JAMES SPADER
CHRIS EVANS
MARVEL
AVENGERS
AGE OF ULTRON
SUMMER 2015


WINNER
TIME
WHAT DOES IT TAKE TO FIND A LOST LOVE?
slumdog millionaire


never
lose
WILL SMITH
MARGOT ROBBIE
focus


ENDER'S
ORSON SCOTT CARD
GAME

Snell Advanced Media

SAM - we're here to support you, always

At SAM, customer support runs through our DNA. When you buy Quantel Rio, your investment continues to pay dividends throughout its lifetime. World class color, editing and finishing technology is combined with the market's leading technical and operational support.

Expert advice, delivered at the right time, helps insure that operational issues don't become problems. At SAM, we make sure that specific information and practical advice is available – whenever, wherever and whatever your need.

More than just spare parts

SAM's rigorous quality assurance differentiates us from other suppliers. As a result, Quantel Rio stands apart from its rivals in terms of robust reliability and operational longevity.

But we don't take anything for granted. Providing further return on your investment, SAM has expert support engineers, available to you 24/7, 365 days a year. When replacement parts are needed, they are dispatched immediately from one of more than 20 warehouse distribution centres worldwide. Our investment ensures speedy resolution of issues that might affect your operations.

Online support increases access, enhances transparency

Through our online support portal you can monitor and track any support issue and even engage one-to-one with support engineers for fast answers to any questions.

Your request might not be urgent, but it is still important to us. Through our website, you can obtain licence keys, product enhancements and the latest software upgrades. Also, you can download manuals and product collateral.

Buying Quantel Rio is just the start of your relationship with SAM – one that we value and cherish. SAM customer support is a key initiative, intended to help you and your team whenever you need it. To learn more about SAM Customer Support Services visit: https://s-a-m.com/support/product-support-packages/ , or contact your local SAM representative.

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2138 - 56 - 501D 05/16 **Quantel Rio V1.25**